

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000274**Date Inspected:** 19-Jun-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lu Jian Hua**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** PQR Mechanical Testing**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Robert Cuellar is present at the fabrication facility of Zenhua Port Machinery Company (ZPMC), LTD for the purpose of monitoring activities relative to the subsequent fabrication of the SFOBB Self Anchored Suspension Bridge. Also present are Caltrans representative Mr. Stan Ku, Caltrans OSM representatives, Mr. Patrick Lowry, Mr. Dave McClary and Mr. Bruce Berger. Only observations by QA Inspector Robert Cuellar are being recorded within this report as follows,

Charpy Vee Notch Testing of ZPMC PQR HP200778-1 and Fillet Weld Soundness Test for PQR HP2007248

The Caltrans QA Inspector is present at the ZPMC testing center as requested by ZPMC for the purpose of observing scheduled charpy vee notch testing of specimens for a PQR identified as HP200778-1. The Caltrans QA Inspector observed that ABF representative Mr. Warren Buehler is present along with ZPMC representative Mr. Lu Jian Hua. The Caltrans QA Inspector observed that ZPMC has prepared the following specimens for testing,

Five Charpy Vee Notch Test Specimens

The Caltrans QA Inspector observed that ZPMC has prepared specimen numbers BBW778-1-17, BBW778-1-18, BBW778-1-19, BBW778-1-20 and BBW778-1-21. These charpy vee notch specimens have been prepared from the heat affected zone (HAZ) of the procedure qualification record test plate. The charpy vee notch test specimens have been tested at -18 degrees Celsius and were observed and recorded as having impact energy values of 121 Joules, greater than 150 Joules, greater than 150 Joules, greater than 150 Joules and greater than 150 Joules. Based on the observation of these charpy impact tests and the recorded values, it appears that the charpy testing is in compliance with AWS D1.5 (2002) and also the Special Provisions for the welding of 485W grade steel. These charpy impact tests are in addition to mechanical testing previously witnessed and recorded by the Caltrans QA

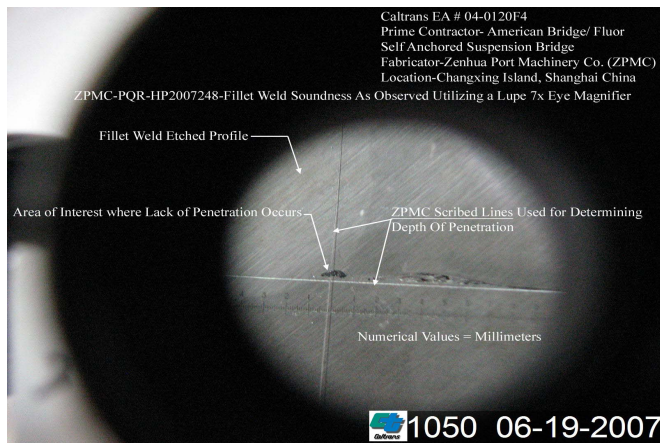
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Inspector on June 15, 2007.

PQR HP2007248-Fillet Weld Soundness

The Caltrans QA Inspector observed two fillet weld soundness specimens that have been prepared for what appears to be a 10mm single pass fillet weld and also a 14-16mm multiple pass fillet weld. The initial observation of these specimens is performed by Ms Xie Ping. Ms Xie Ping was observed applying a horizontal and vertical scribed lines that reference the junction point where the depth of the fillet weld is required to satisfy. The Caltrans QA Inspector observed that Ms. Xie Ping initially attempted to utilize unaided visual means for performing her evaluation of the fillet weld soundness tests. Ms Xie Ping requested to use the Caltrans QA Inspectors 7x eye magnifier. The Caltrans QA Inspector allowed Ms. Xie Ping to utilize the 7x eye magnifier at her own discretion. Ms. Xie Ping concluded her interpretation of the fillet weld soundness tests and voiced to Mr. Lu Jian Hua in Chinese language that they are acceptable. The Caltrans QA Inspector performed an examination of the presented fillet weld soundness tests utilizing Lupe 7x eye magnifier. The Caltrans QA Inspector observed and brought it to the attention of Lu Jian Hua and Mr. Warren Buehler that the fillet weld soundness specimens contain slag inclusions in an area of the specimen where the fillet weld root does not penetrate to the required root junction of the two plates joined. Mr. Lu Jian Hua and Mr. Warren Buehler utilized the 7x eye magnifier to observe the specimens and concurred with the Caltrans QA Inspector. Ms. Xie Ping also observed the specimens again and also concurred that the fillet weld soundness tests do not comply with the requirements of AWS D1.5 (2002). The Caltrans QA Inspector was presented with ZPMC, Mechanics Test Department records for this fillet weld soundness test that reflects that the test specimens are in non-compliance due to lack of fusion. Included below is a digital picture of a fillet weld soundness specimen as it appears utilizing a Lupe 7x magnifier.



Summary of Conversations:

1) As recorded within the contents of this report. 2) The Caltrans QA Inspector was present for the daily morning meeting between ZPMC, ABF and Caltrans on-site representatives. This meeting serves for the purpose of addressing scheduled activities for each date. Representatives present included Mr. Lu Jian Hua of ZPMC, ASNT Level III consultant for ZPMC Mr. Stephen Gang, Mr. Nate Lindell, Mr. Dave Williams, James Bowers and Warren Buehler of ABF and, Mr. Stan Ku, Mr. Patrick Lowry, Mr. Dave McClary and the QA Inspector of Caltrans.

A manual record of the items listed below is being maintained on-site by Caltrans OSM.

Items Recorded

- 1) Mr. Nate Lindell and Mr. Lu Jian Hua provided an update of ongoing PQR testing. ZPMC PQRs HP2007 143 and HP2007144 are ongoing in process.
- 2) Welder Qualification testing, Mr. Lu Jian Hua voiced that there would be approximately fifty (50) welders

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attempting qualification today.

3) ZPMC PQR HP200778-1, Mr. Lu Jian Hua stated that charpy vee notch testing of the heat affected zone would be performed today at 1000.

4) Ultrasonic Testing (UT) Procedure for closed ribs partial joint penetration groove welds- Lu Jian Hua voiced that ZPMC would demonstrate there UT procedure for the closed rib partial joint penetration groove welds today at 1300 and that ABF and Caltrans are welcome to attend. The group elaborated on various methods of establishing an ultrasonic testing procedure for the closed rib partial joint penetration groove welds insofar as to what should be included. Mr. Stephen Gang voiced that the procedure would utilize a 12mm thick calibration block with notches with the use of a sixty (60) degree wedge transducer combination. When UT of the closed rib partial joint penetration groove welds is performed the inspector will write down the depth of penetration, for example 6.5. After the ultrasonic testing the samples will then be cut for macroetching to verify depth of penetration verses what the inspector recorded for depth of penetration.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Cuellar,Robert	Quality Assurance Inspector
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Reviewed By:	McClary,David	QA Reviewer
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